

IN THE SPECIFICATION:

Paragraph beginning at line 3 of page 1 has been amended as follows:

The present invention relates to an ink jet recording apparatus which is applied to, for example, a printer or a facsimile machine and which discharges ink from a nozzle opening.

Paragraph beginning at line 24 of page 4 has been amended as follows:

Further, there is a problem in ~~that~~: that most of ink jet-head users do not know a the lifetime of the ~~head~~, head, and in the case where performance of the head, for example, an ink discharge characteristic is deteriorated, it is difficult for the users to make a judgment on ~~which is~~ whether the cause of the deterioration ~~between~~ is the expired lifetime or the failure of the head. On the other hand, there is a problem in ~~that~~: that a manufacturer does not know the head usage status on the user ~~side~~, side and thus, it is relatively difficult for the manufacturer to discover the cause of the head failure.

Paragraph beginning at line 9 of page 5 has been amended as follows:

~~Note that,~~ It is noted that in the case where the identical ink jet head is used to the end of its lifetime ~~last~~ without exchange, the usage status of the head can be grasped with relative ease. Thus, when a problem ~~is caused~~ arises in performance of the head, a projection can be made as to which is the cause between, for example, the lifetime of the head or other factors. However, most ~~of the~~ users ~~each~~ use plural ink jet heads while the heads are replaced with one another, and thus, it is very difficult that the usage status is managed to be grasped for each head. Further, there is also a case where, depending on the user, different types of ink are used with the identical head while being replaced with one another ~~depending on users~~. Therefore, it is very difficult to discover the cause of the head failure.

Paragraph beginning at line 4 of page 6 has been amended as follows:

In order to attain the above-described object, according to a first aspect of the present invention, there is provided an ink jet recording apparatus ~~including:~~ comprising an ink jet head which has a wiring substrate mounted with a driving circuit including a driving IC and in which a driving voltage is applied to an electrode provided on a side wall of

a groove formed in a piezoelectric ceramic plate to vary a volume in the groove to thereby discharge ink filled therein from a nozzle opening; and an external circuit connected to the driving circuit, ~~in which: the.~~ The ink jet head is provided with data storage means for storing driving information data at least including driving condition data of the ink jet head; ~~and the head.~~ The external circuit is provided with setting means for reading at least the driving condition data included in the driving information data and automatically setting driving conditions of the ink jet head.

Paragraph beginning at line 18 of page 7 has been amended as follows:

According to the present invention, in the ink jet recording apparatus, the ink jet head is provided with the data storage means for storing a plurality of different types of the driving information data ~~at least~~ including the driving condition data of the ink jet head, and the external circuit is provided with the setting means, which is connected to the data storage means, for reading at least the driving condition data stored in the data storage means and automatically setting the driving conditions of the ink jet head. Therefore, the operation for managing and setting the driving conditions of the ink jet head can be simplified, and the usage status of the ink jet head can be reliably grasped.

Paragraph beginning at line 4 of page 12 has been amended as follows:

In a piezoelectric ceramic plate 31 that constitutes the head chip 30, plural channels or grooves 33 communicated with nozzle openings 32 are arranged in parallel with each other and are separated from one another by side walls 34. One end portion of each groove 33 in a longitudinal direction thereof is provided so as to extend to one end surface of the piezoelectric ceramic plate 31 while the other end portion is not extended toward the other end surface and gradually becomes shallow. Further, electrodes 35 for application of a driving electric field are formed on surfaces on the opening side of the side walls 34 on both sides in a width direction of each groove 33 along a longitudinal direction thereof.

Paragraph beginning at line 16 of page 15 has been amended as follows:

Further, the ink jet head 20 is provided with the head chip 30 and the wiring substrate 50 as described above. In this embodiment, a driving circuit 52 connected to the head chip 30 and the data storage means 100 in which a plurality of types of driving information data of the ink jet head 20 ~~is~~ are stored are provided on the wiring substrate 50.